
Planning the site

Site planning is an important element in planning the installation of a Meridian 1. It affects the installation cost, as well as operation and maintenance, and can have an overall effect on system performance.

Selecting a site

Select and evaluate sites according to the requirements in this document and the following criteria:

- Space:
The site must provide adequate space for unpacking, installation, operation, potential expansion, service, and storage. The site must provide space for sufficient cooling. You may need additional space for a maintenance and technician area.
- Location:
The location should be convenient for equipment delivery and close to related work areas. You must consider the location of related equipment (such as the distribution frame and batteries) and cable limitations when selecting the site.
- Grounding and power:
Proper grounding and sufficient power facilities must be available.
- Structural integrity:
The floor must be strong enough to support anticipated loads and, if applicable, the ceiling must be able to support overhead cable racks.

Developing the site

You must consider the following factors during site development:

- space and equipment layout requirements
- detailed floor plan and floor loading requirements
- building cable plans

The equipment room

Space and equipment layout requirements differ with each installation. Consider primary storage, secondary storage, and maintenance and technician space requirements when you plan the site.

Primary storage

The floor area required for a Meridian 1 depends on the number of columns, the length-to-width ratio of the area, and the location of walls, partitions, windows, and doors. To determine the exact layout required, prepare a detailed floor plan after reading all of the requirements in this chapter.

Although operating needs determine the general location of terminal devices, these devices must not be located beyond the maximum distances defined for their interface cards. Wall jacks and outlets must be provided for all devices located in the equipment room.

Secondary storage

Provide space in the equipment area for storing disks, printer paper, printouts, and daily reports. A secure storage room for spare parts is recommended.

Whenever possible, maintain the same environmental conditions in the equipment room and storage areas. If it is not possible to maintain the environment of the storage area exactly the same as the environment of the operating equipment, give stored materials time to adjust to the equipment room environment before using them.

Maintenance and technician area

You can use the maintenance and technician area as an online work center and a place to store tools, test equipment, system documents, and spare parts. The area should have good lighting and convenient access to the Meridian 1.

Typical items in a maintenance and technician area are as follows:

- shelves for instruction books
- spare parts storage room
- paper storage area
- locking cabinet or storage area for backup disks
- table or desk
- terminal, printer, or equivalent device

During regular system operation, a terminal, or a modem, or both must be connected permanently to the system to provide a constant I/O interface. You can use more than one terminal or modem. Plan for surface space, power outlets, and the availability of the terminals/modems before installation.

The floor plan

Prepare a detailed floor plan for each site, indicating the size and location of the following:

- the system columns and modules, including planned expansion areas
- the main distribution frame (MDF)
- the service panel
- system terminal, printer, or other terminal devices (such as modems)
- external power equipment (such as rectifiers)
- any cable racks
- PFTUs and auxiliary power supplies (if either are equipped)
- space for additional equipment, such as reserve power equipment or auxiliary processors

Follow these guidelines when you plan the equipment room layout:

- The minimum acceptable distance between equipment aisles is 76 cm (30 in.).
- The minimum acceptable distance between the end of the column and walls, and between rows, is 91.4 cm (3 ft).
- The minimum acceptable ceiling height is 243.8 cm (8 ft) or greater.

Note: According to the National Fire Code, equipment must be at least 30.5 cm (12 in.) from a sprinkler head. If a system is four modules high with a cable rack, do not place the equipment directly under any sprinkler heads.

In multiple-group systems, you must consider possible network expansion in the floor plan because you must locate network group modules together. There are several possible ways that you can expand the system. One possibility is to provide space for additional network groups to the left of the CPU Modules, and additional peripheral equipment (IPE or PE) to the right. Another possibility is to add peripheral equipment modules in a separate row of columns.

Meridian 1 dimensions appear in [Table 14](#). [Figures 6, 7, and 8](#) show sample equipment room floor plans. These samples may vary from your floor plan, depending on your system needs and the size and arrangement of your equipment room.

Table 14
Equipment dimensions

Equipment	Width		Depth		Height	
	cm	in.	cm	in.	cm	in.
Pedestal	81.3	32.0	66.0	26.0	25.4	10.0
Top cap	81.3	32.0	55.9	22.0	10.2	4.0
Module	81.3	32.0	55.9	22.0	43.2	17.0
One-module column	81.3	32.0	66.0	26.0	78.7	31.0
Two-module column	81.3	32.0	66.0	26.0	121.9	48.0
Three-module column	81.3	32.0	66.0	26.0	165.1	65.0
Four-module column	81.3	32.0	66.0	26.0	208.3	82.0
Note: Multiple-column systems require a 7.6 cm (3 in.) spacer between each column for cable routing and to provide EMI shielding.						

Figure 6
Sample equipment room floor plan: system option 21E

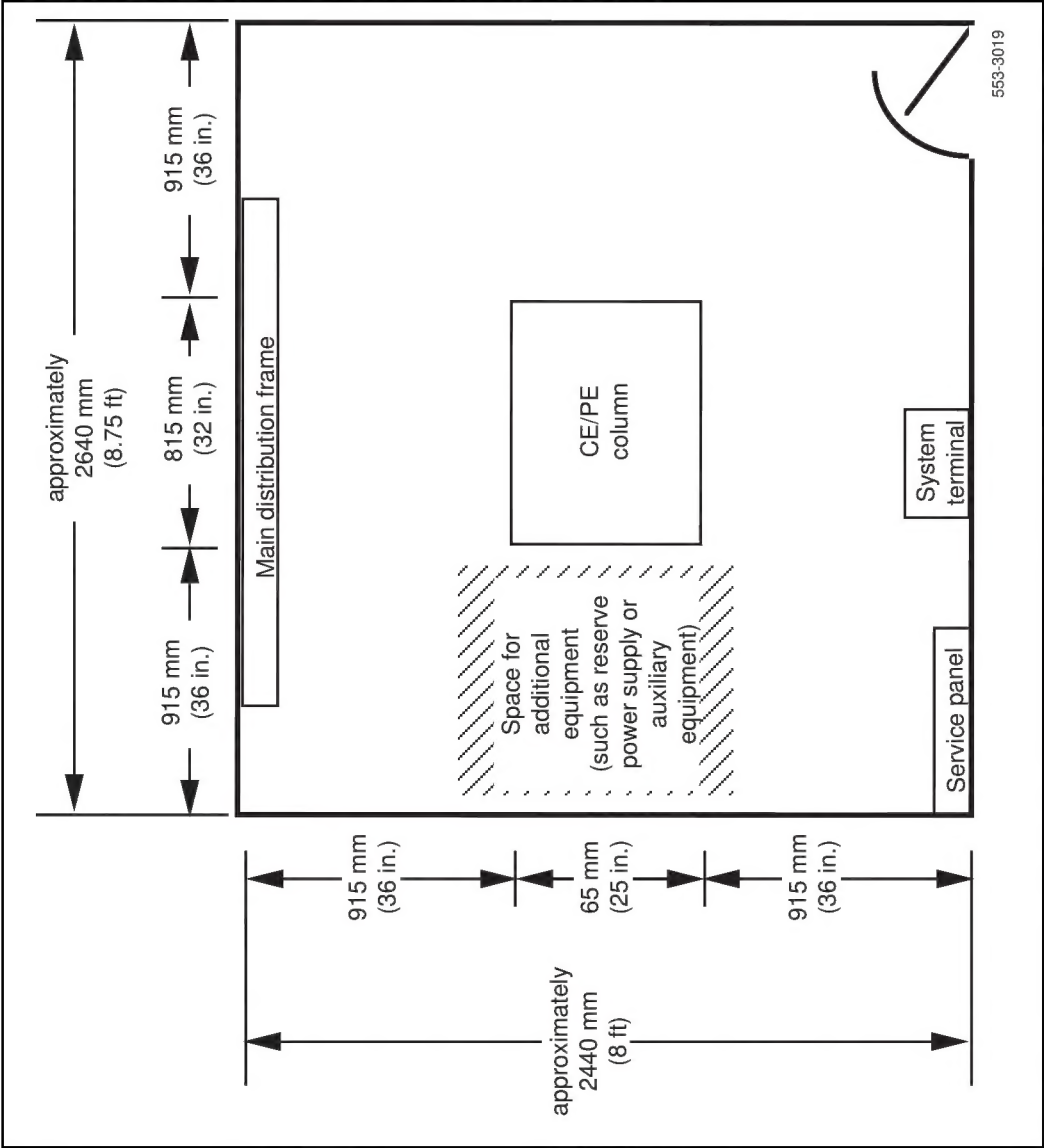


Figure 7
Sample equipment room floor plan: system options 51C and 61C

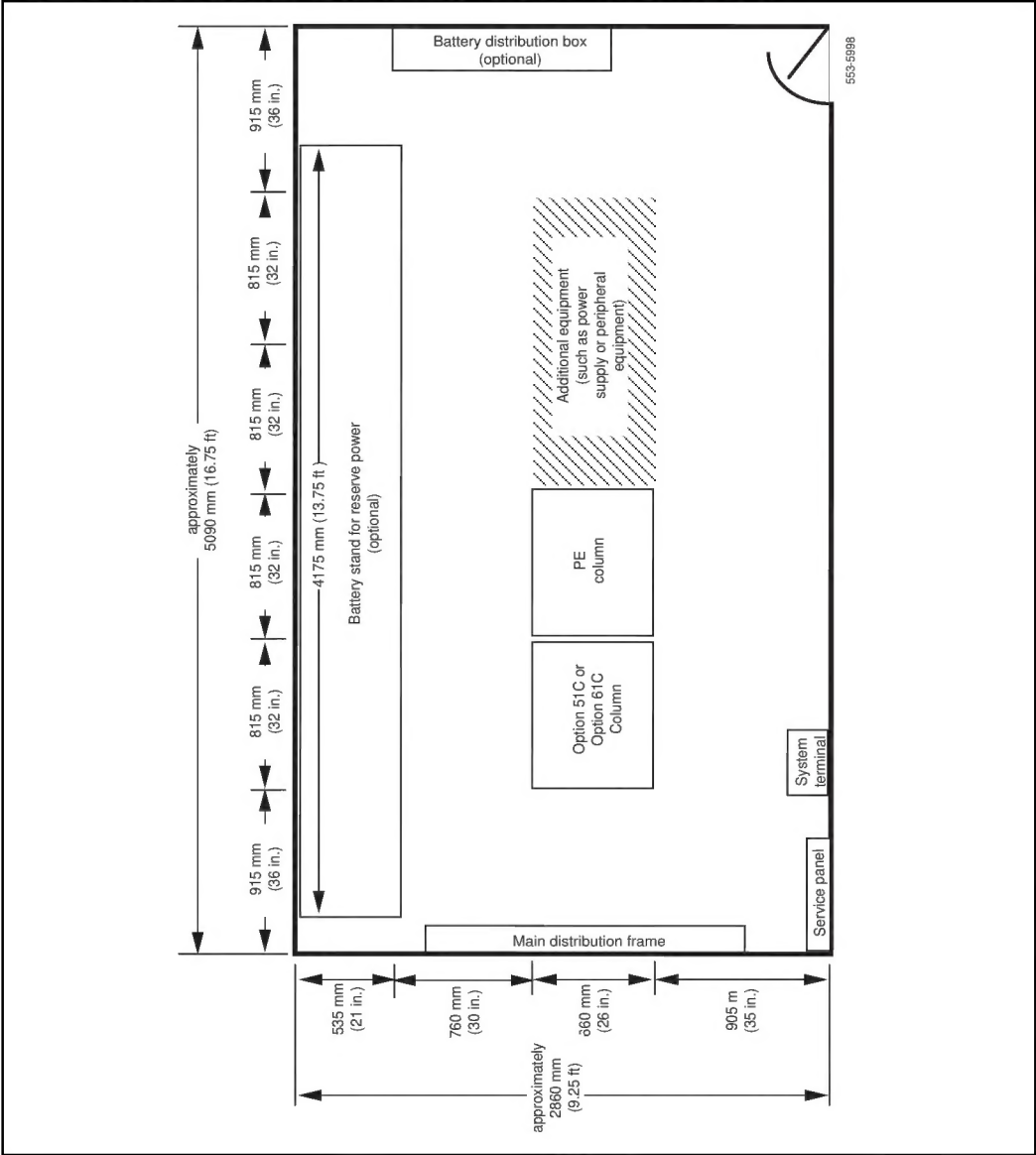
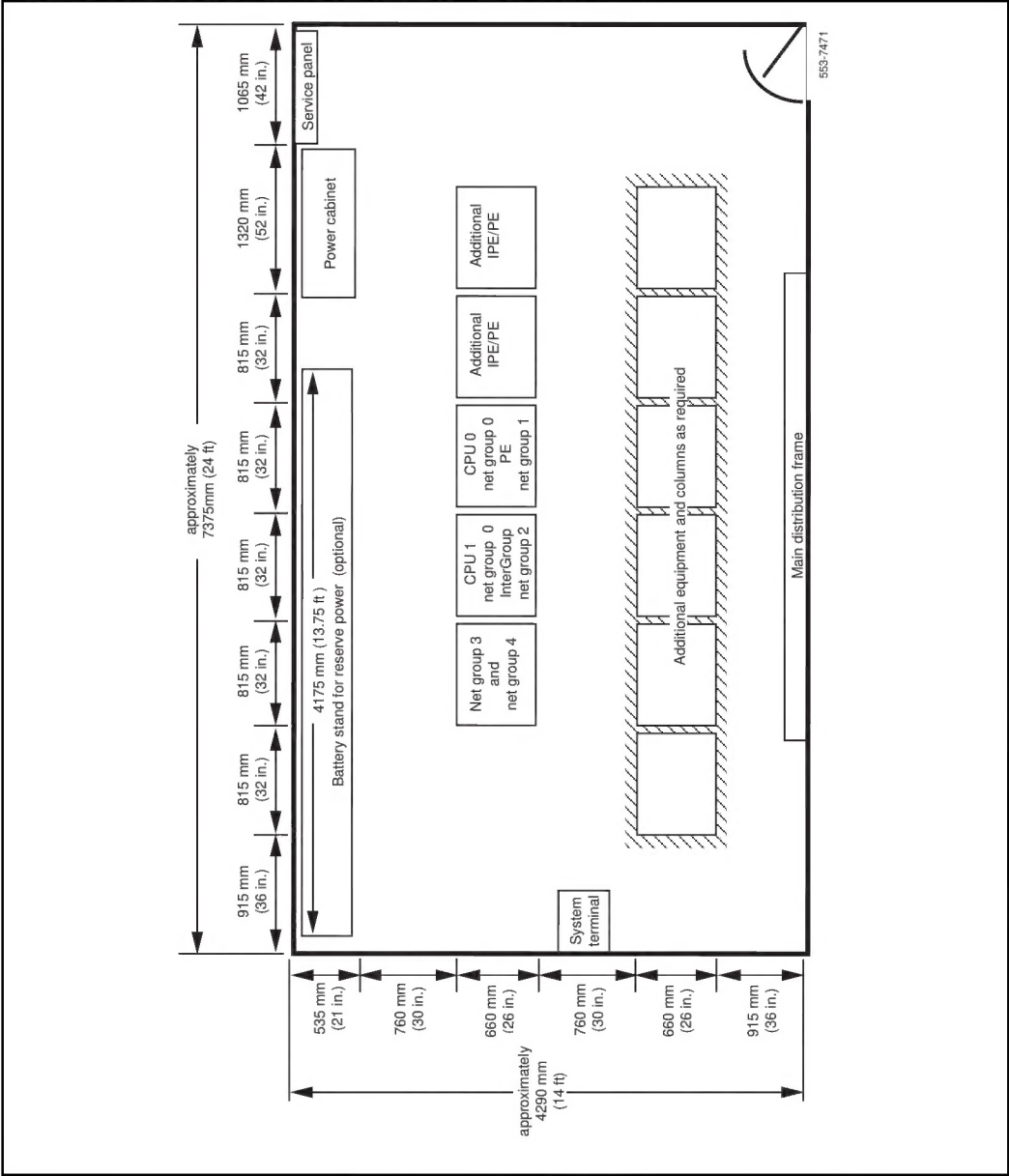




Figure 9
Sample equipment room floor plan: system option 81C



Floor loading estimates

You must estimate floor loading to plan module distribution. “Floor loading” is the weight of the system divided by the occupied floor area; “point loading” is the local pressure exerted by the feet of the system on the floor.

[Table 15](#) gives Meridian 1 weights. [Table 16](#) gives floor loading estimates. These estimates represent fully loaded columns complete with pedestal, maximum circuit card configurations, power supplies, and cables.

Table 15
Equipment weights

Equipment	Weight empty		Weight full	
	kg	lbs	kg	lbs
Pedestal	18.1	40	31.7	70
Top cap	6.8	15	6.8	15
Module	22.7	50	58.9	130
One-module column	N/A	N/A	97.5	215
Two-module column	N/A	N/A	156.5	345
Three-module column	N/A	N/A	215.4	475
Four-module column	N/A	N/A	274.4	605

Table 16
Floor loading estimates

Number of modules	Floor load (lbs/ft ²) (kPa)		Point load (lbs/in ²) (kPa)	
One	38.1	(1.8 kPa)	11.0	(75.8 kPa)
Two	60.3	(2.8 kPa)	17.3	(119.0 kPa)
Three	82.4	(3.9 kPa)	23.7	(163.4 kPa)
Four	104.6	(5.0 kPa)	30.0	(206.8 kPa)
Note: The numbers under “Floor load (lbs/ft ²) (kPa)” are based on a floor area of .52 sq m (5.64 sq ft) for the system. These numbers do not include the weight of the optional overhead cable rack. The numbers under “Point Load (lbs/in ²) (kPa)” are based on distributing the system weight among four feet, each with an area of 317 sq mm (4.91 sq in.); these numbers do not reflect the use of optional casters.				

The building cable plan

In the building cable plan, show the routing of all wiring, the location and wiring requirements of each terminal device connected to the system, and any other relevant information about the device. Also show the location of distribution frames, conduits and access points, and power outlets.

In addition, you need to perform the following tasks:

- Identify the ownership of existing building wire, if you are using any.
- Perform a random sampling of in-place wiring to ensure that it meets specifications for high-speed lines. All wiring carrying high-speed data must pass a verification test as part of the installation procedures.
- Identify the location of conduits and floor ducts. When telephone cable is run in conduit, that conduit must not be used for any other wiring.
- Identify the location of all distribution points, main and intermediate.
- Provide three pairs of telephone wire from a distribution frame to a nearby telephone jack for each terminal device. Modular jacks must be within 2.4 m (8 ft) of the device.
- Provide a 16-pair (or 25-pair) cable equipped with an Amphenol-type connector for each attendant console.

Divide the building cable plan into zones. Zones are typically the termination point of conduits throughout the office. Identify each zone on the building cable plan with a letter or number, and assign a block of numbers to each zone. [Figure 10](#) gives an illustration of zoning.

Note: Be sure to leave room for expansion.

Wire routing

To plan wire routing, establish the start and end point of each cable relative to the location of the terminal devices in the building, then examine the construction of the office to determine the best wiring routes. Consider the following guidelines when performing this task:

— Floors

- In the open, wires can run along baseboards, ceiling mouldings, or door and window casings. For the safety of employees, never run wire across the top of the floor.
- When concealed, wires can run inside floor conduits that travel between distribution frames and jacks. (Under-carpet cable is not recommended.)

— Ceilings

National and local building codes specify the types of telephone wire that you can run in each type of ceiling. Local building codes take precedence.

— Walls

Cables that run vertically should, when possible, run inside a wall, pole, or similar facility for vertical wire drops. Cables that run horizontally cannot be blind-fed through walls.

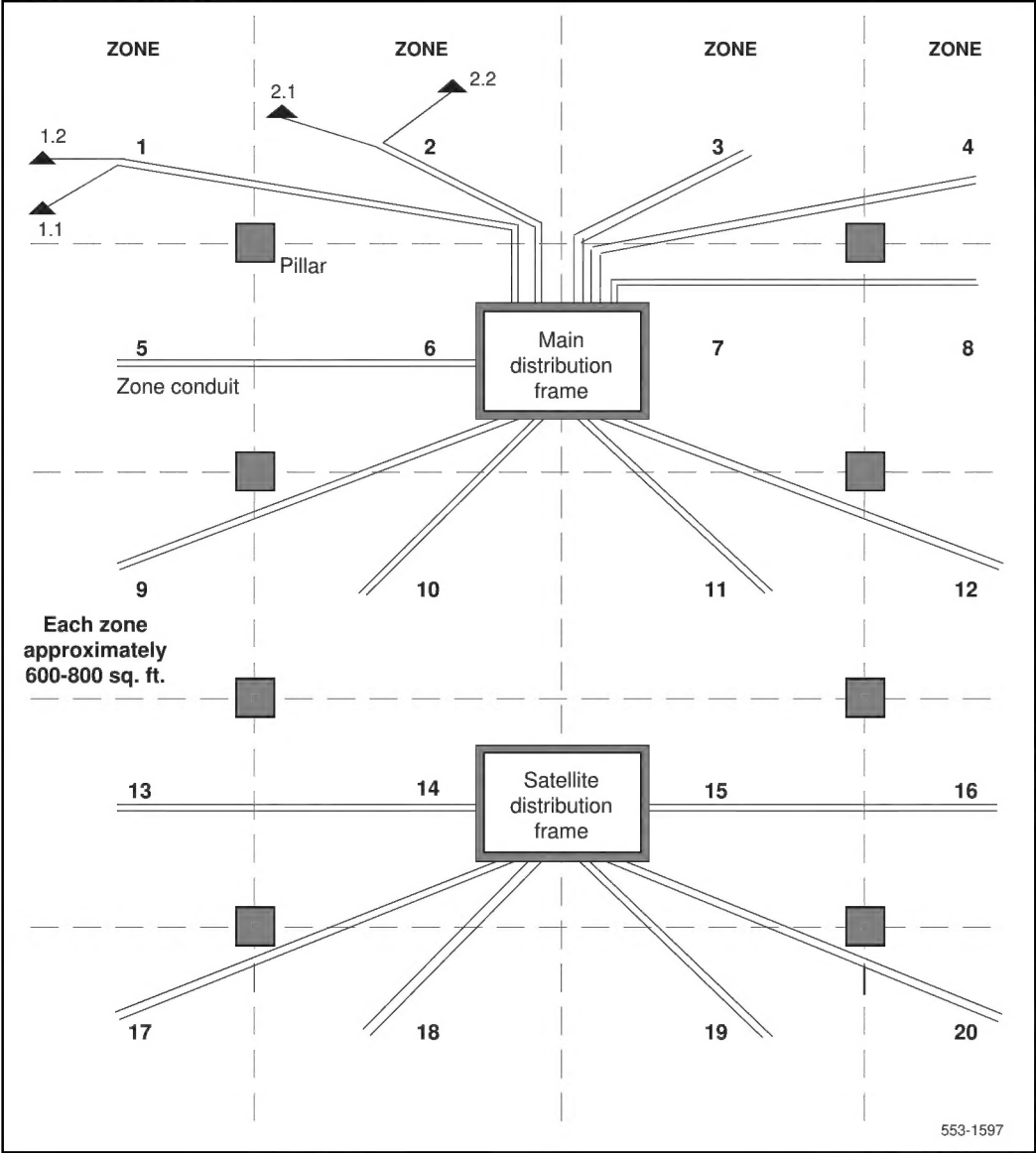
— Between floors

Locate distribution frames as closely to one another as possible. Local coding laws specify whether or not a licensed contractor is required if conduit is installed.

— EMI

Data degradation may occur if wires travel near strong EMI sources. See [“Equipment room requirements” on page 16](#) for a description of common sources of interference.

Figure 10
Building cable zones



Termination points

Once you have determined the wire routing, establish termination points. Cables can terminate at the following locations:

- the MDF, typically in the equipment room
- intermediate distribution frames, typically on each floor in telephone utility closets
- wall jacks or terminal boxes, typically located near the terminal device

At the distribution frame (also called the cross-connect terminal), house cables terminate on the vertical side of two-sided frames and cross connect to equipment that is typically located on the horizontal. If you use a color field scheme, house cables typically terminate in the blue field and the equipment terminates on the purple (U.S.A.) or white (Canada) field.

In all cases, clearly designate the block where the cables terminate with the cable location information and the cable pair assignments. Keep a log book (cable record) of all termination information. See [Figure 11](#) for an example.

Figure 11
Sample cable record

CABLE RECORD

Customer _____
Location _____
Cable _____ Binder _____ Page ____ of ____

DN	TN				NAME	FEATURES / REMARKS	TERMINAL DEVICE	BLOCKS	COLOR
	M	S	C	U				DF HOUSE	
									W BL
									W OR
									W GR
									W BR
									W SL
									R BL
									R OR
									R GR
									R BR
									R SL
									BK BL
									BK OR
									BK GR
									BK BR
									BK SL
									Y BL
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									Y GR
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									V BL
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